Mississippi National River
and Recreation Area (MNRRA)
National Park Service

Seth Eastman. Minnesota Historical Society

Zebulon Pike. UMR Expedition 1805-06.

Pike - Independence National Historical Park.

Major Stephen Long. UMR Expeditions of 1817 & 1823.

Independence National Historical Park.

Mississippi – St. Croix Confluence

Mississippi-Minnesota Confluence

Met Council

Major General Gouverneur K. Warren

St. Paul District,
Corps of Engineers

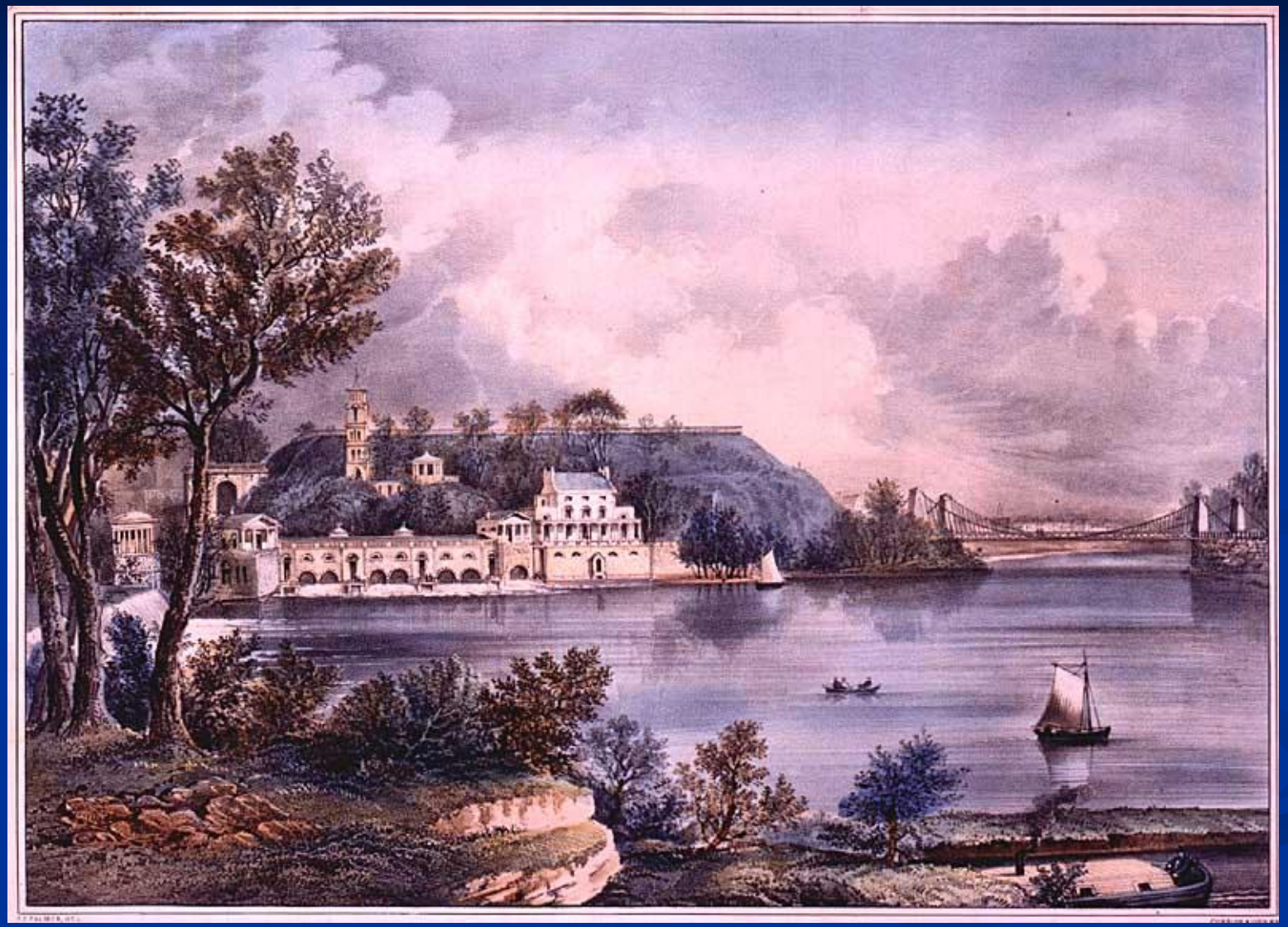
Lumber Mills at St. Anthony, ca. 1870

Minnesota Historical Society

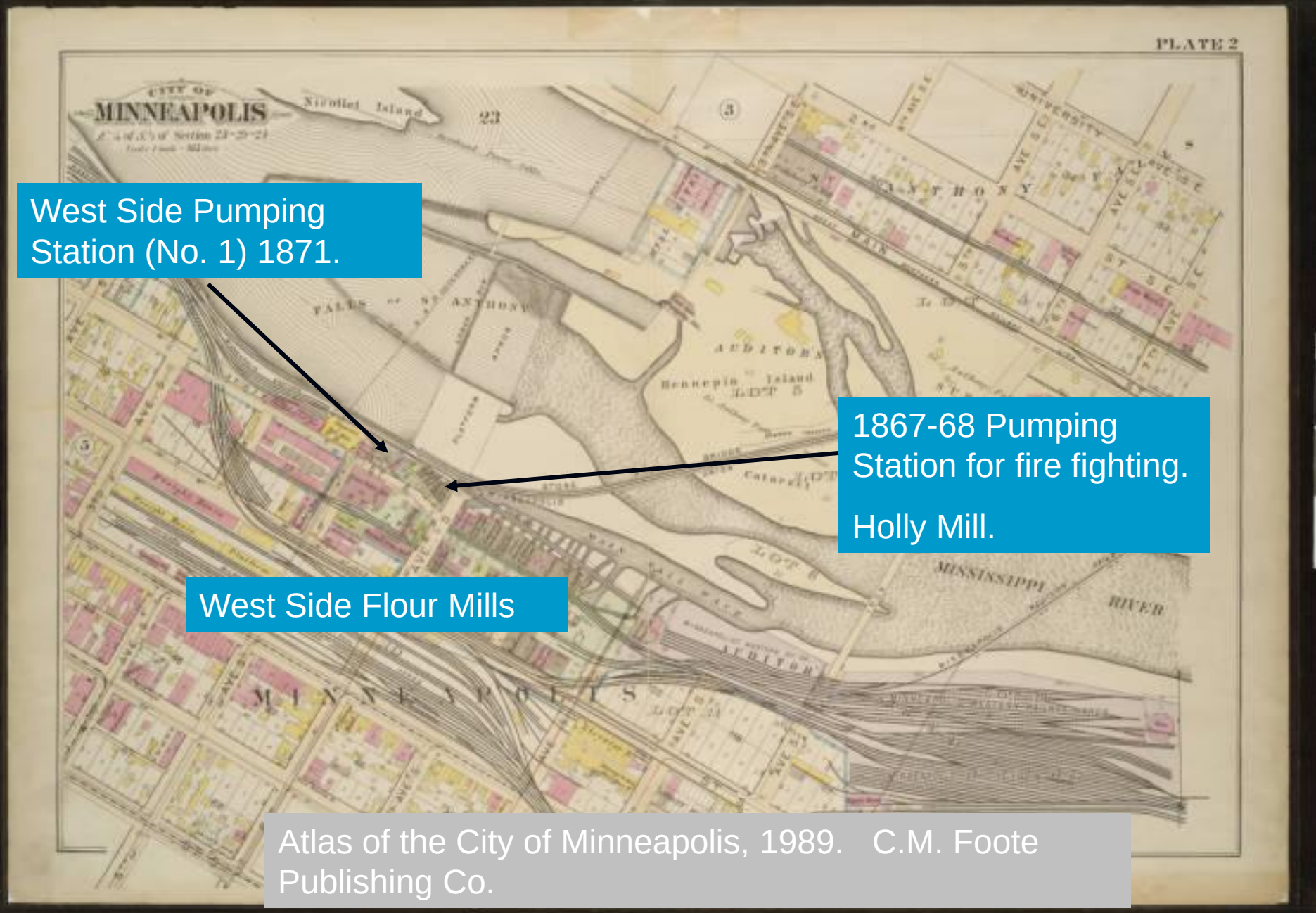
Community Water Pump, Minneapolis.

Minnesota Historical Society

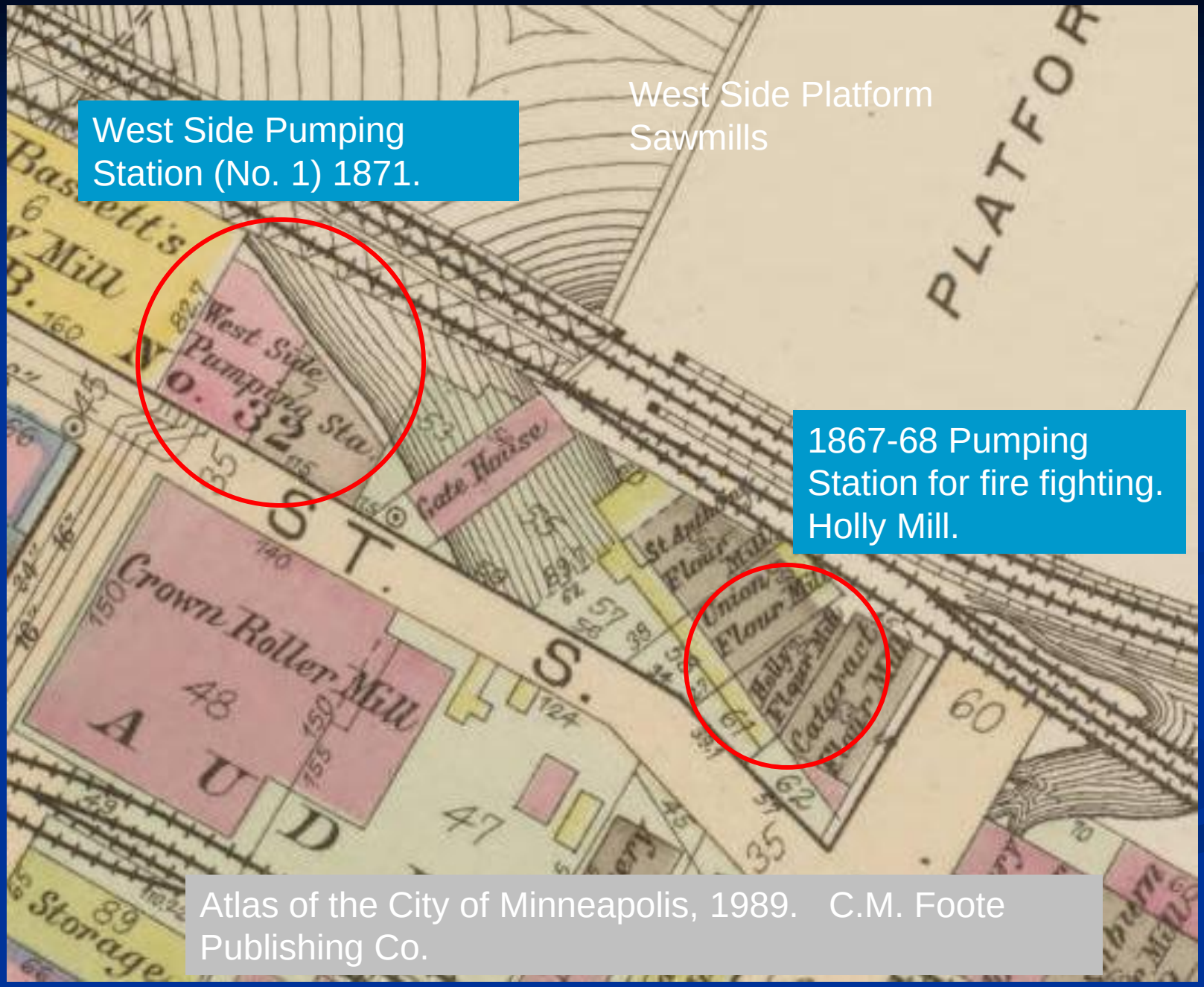
Fairmount Water Works



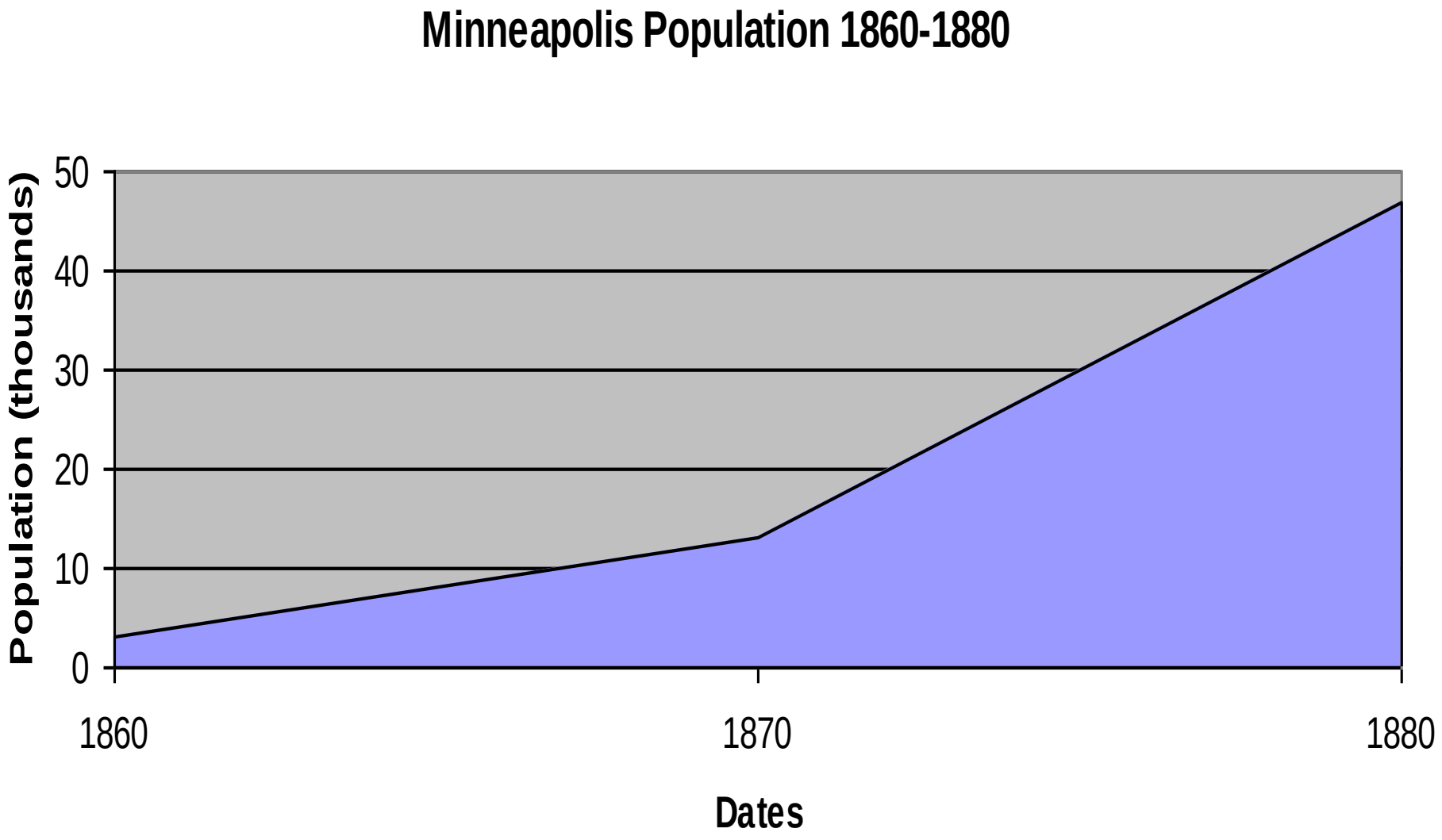
Currier and Ives,ca. 1865. Jay Snider Collection
www.phillyh2o.org/backpages/MSB_Water.htm



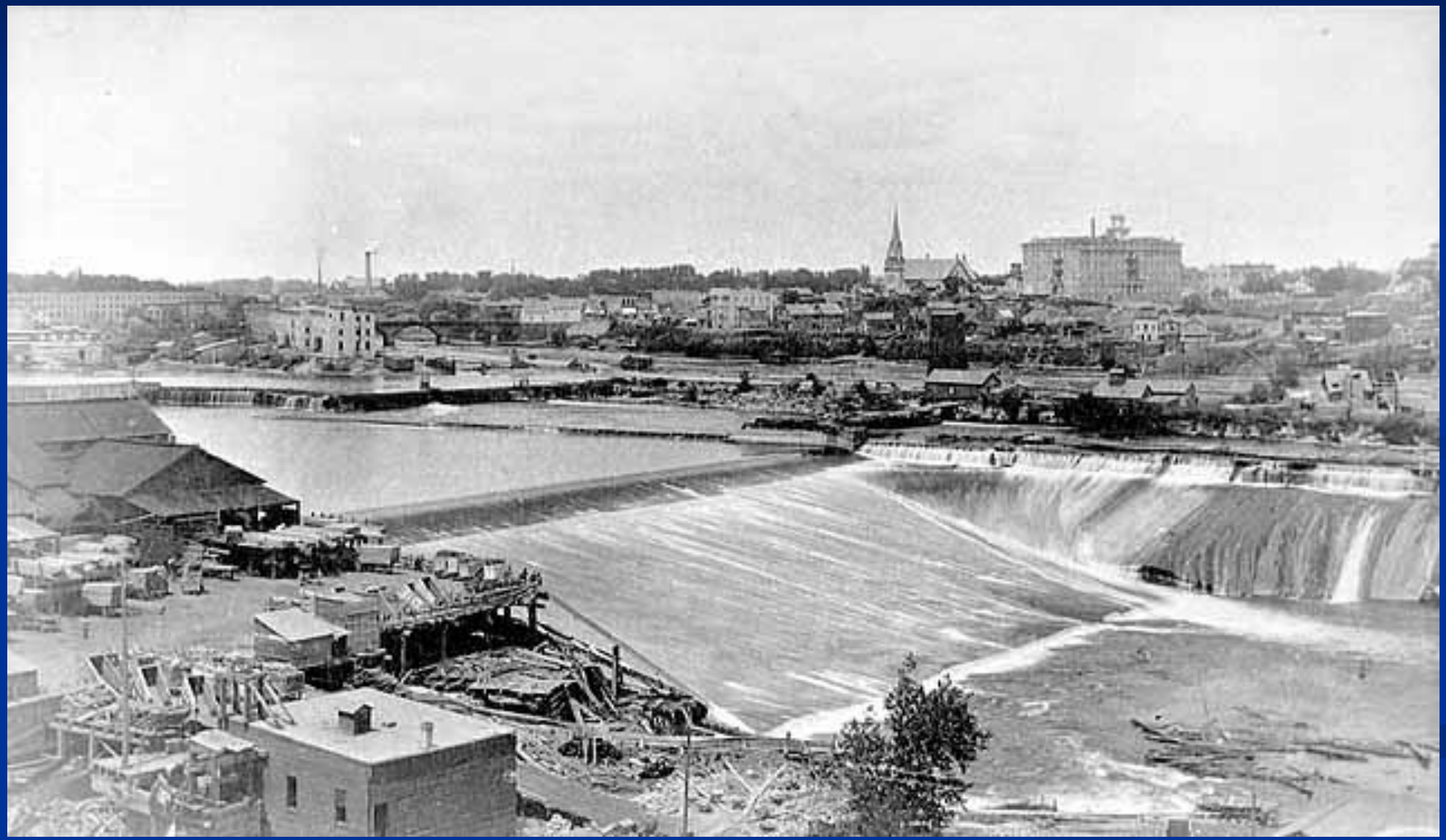
Atlas of the City of Minneapolis, 1989. C.M. Foote Publishing Co.



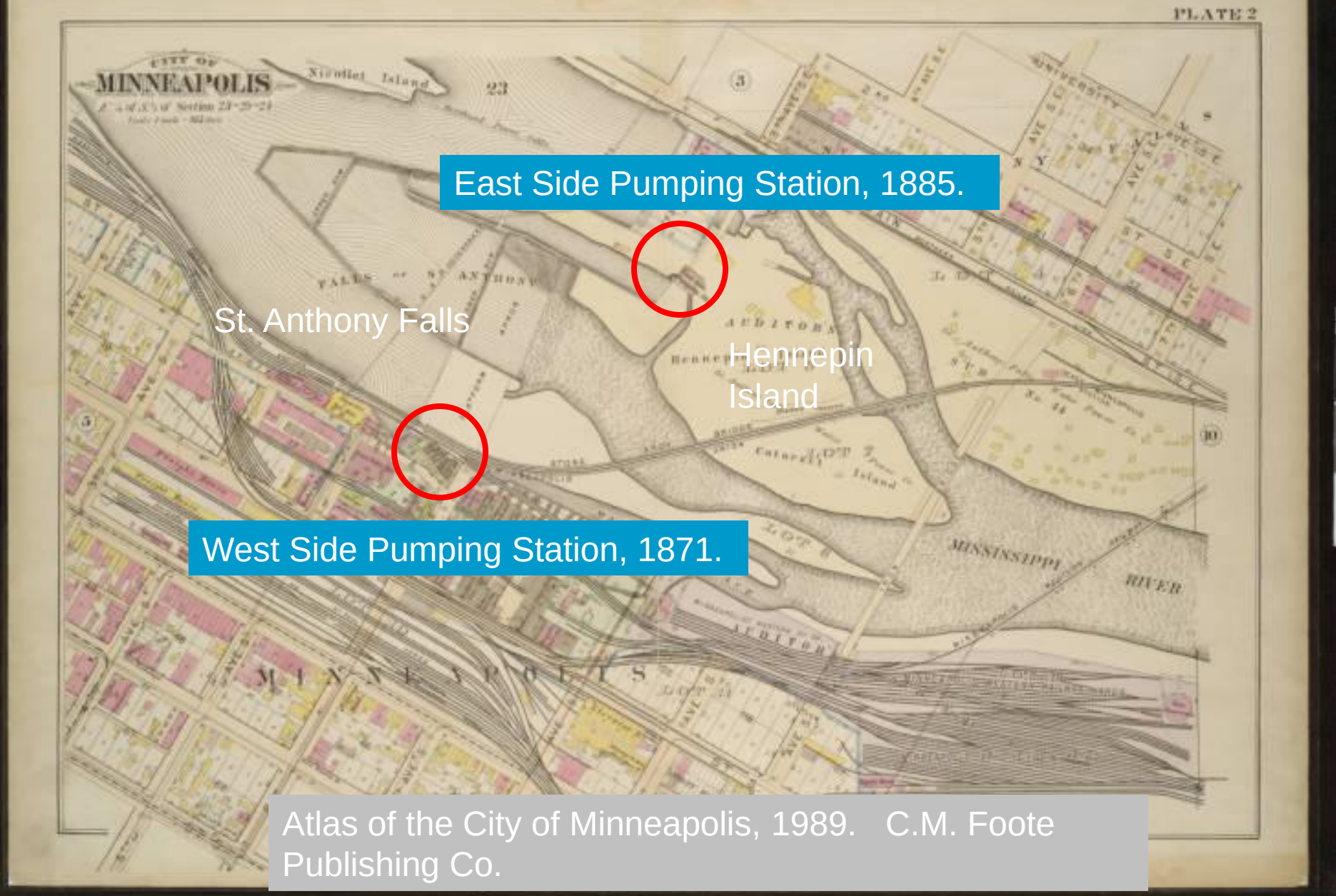
Atlas of the City of Minneapolis, 1989. C.M. Foote Publishing Co.


Minneapolis Population 1860-1880
Population (thousands)
50
40
30
20
10
0
1860
1870
1880
Dates

St. Anthony Falls, ca. 1884

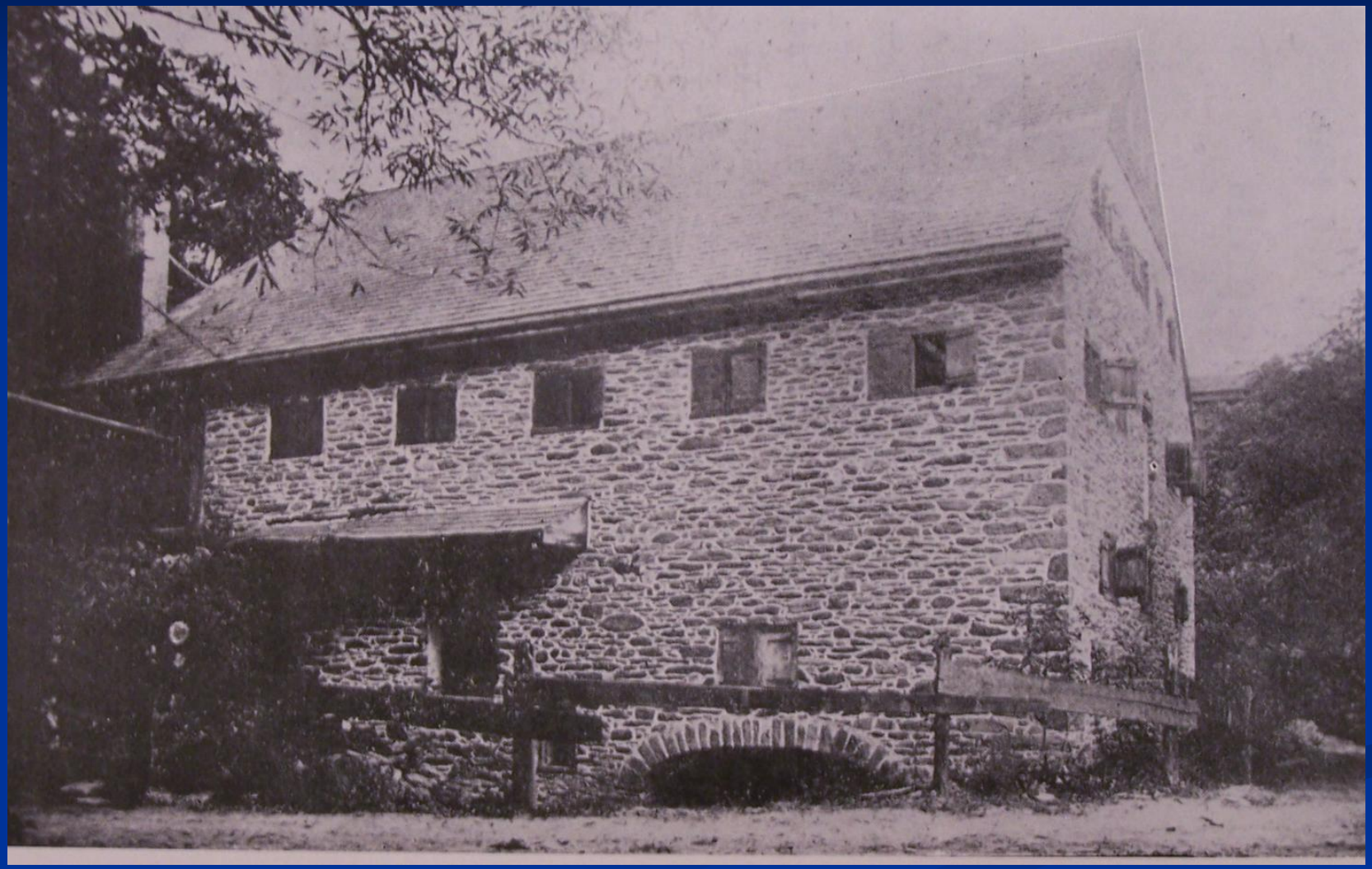


Minnesota Historical Society

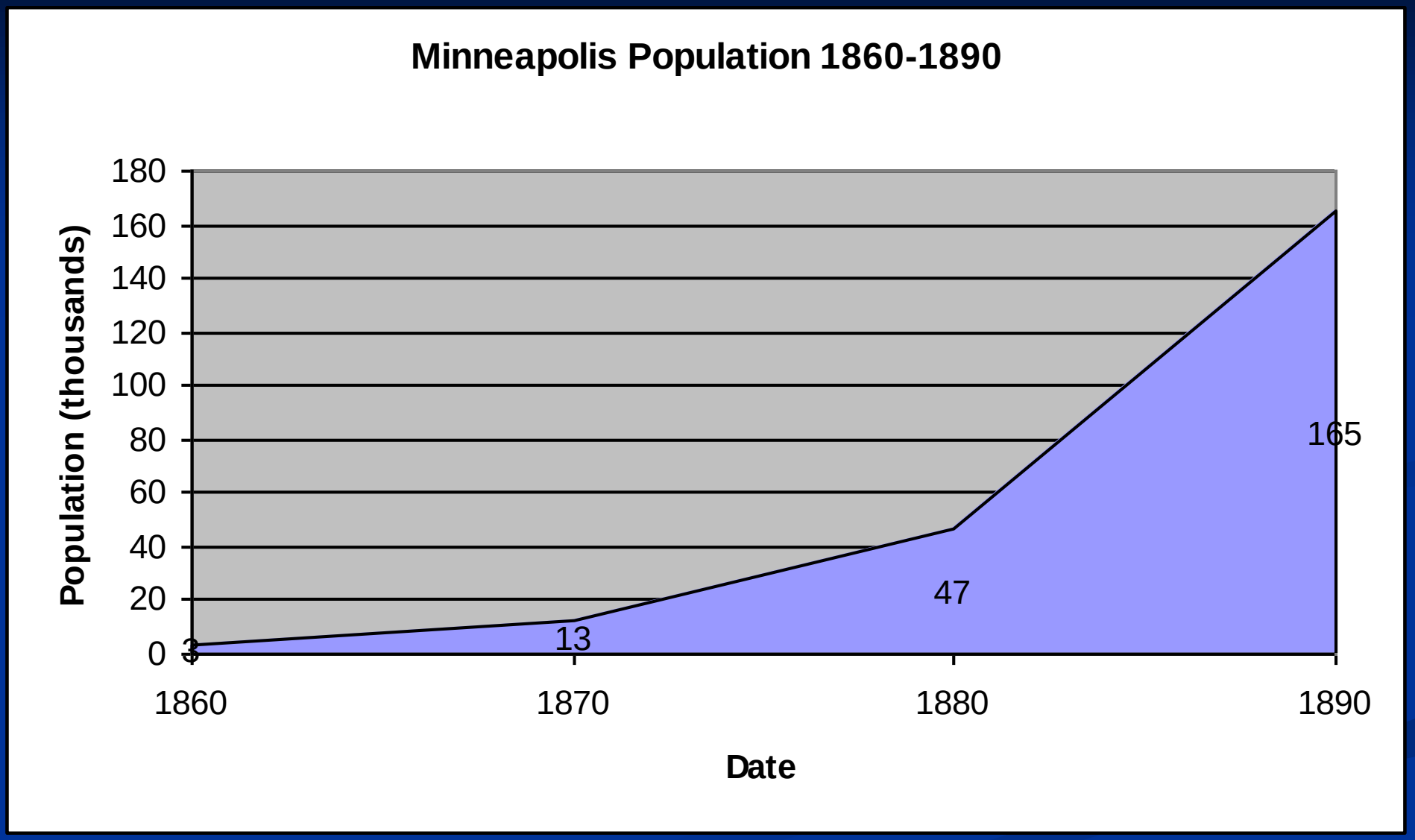


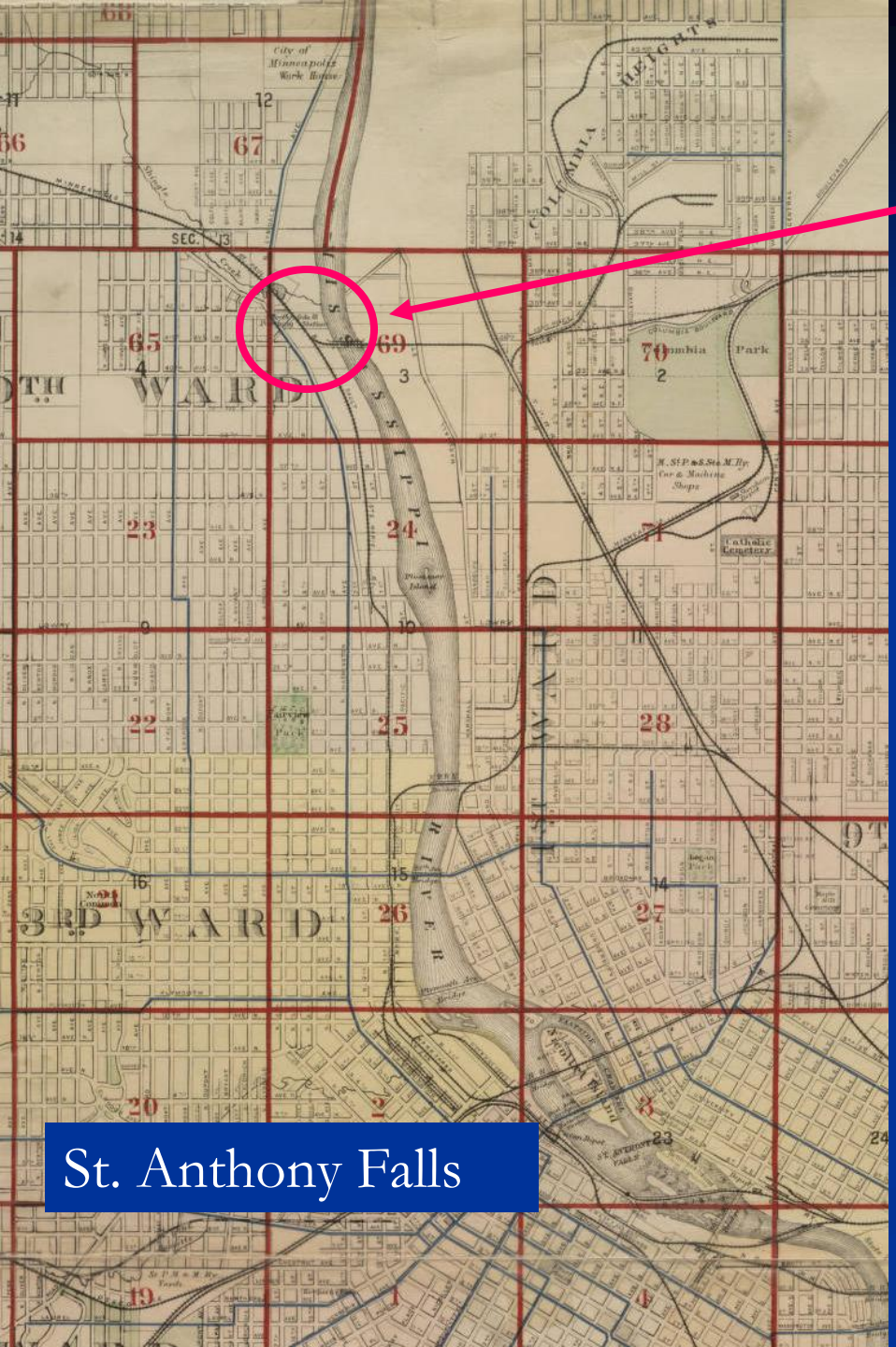
Atlas of the City of Minneapolis, 1989. C.M. Foote Publishing Co.

Pump Station No. 2, Hennepin Island, 1885-1904



The Water Works of the City of Minneapolis Minnesota: A Brief Historical Sketch of the Present Water Works. January First 1919. Minnesota Historical Society.

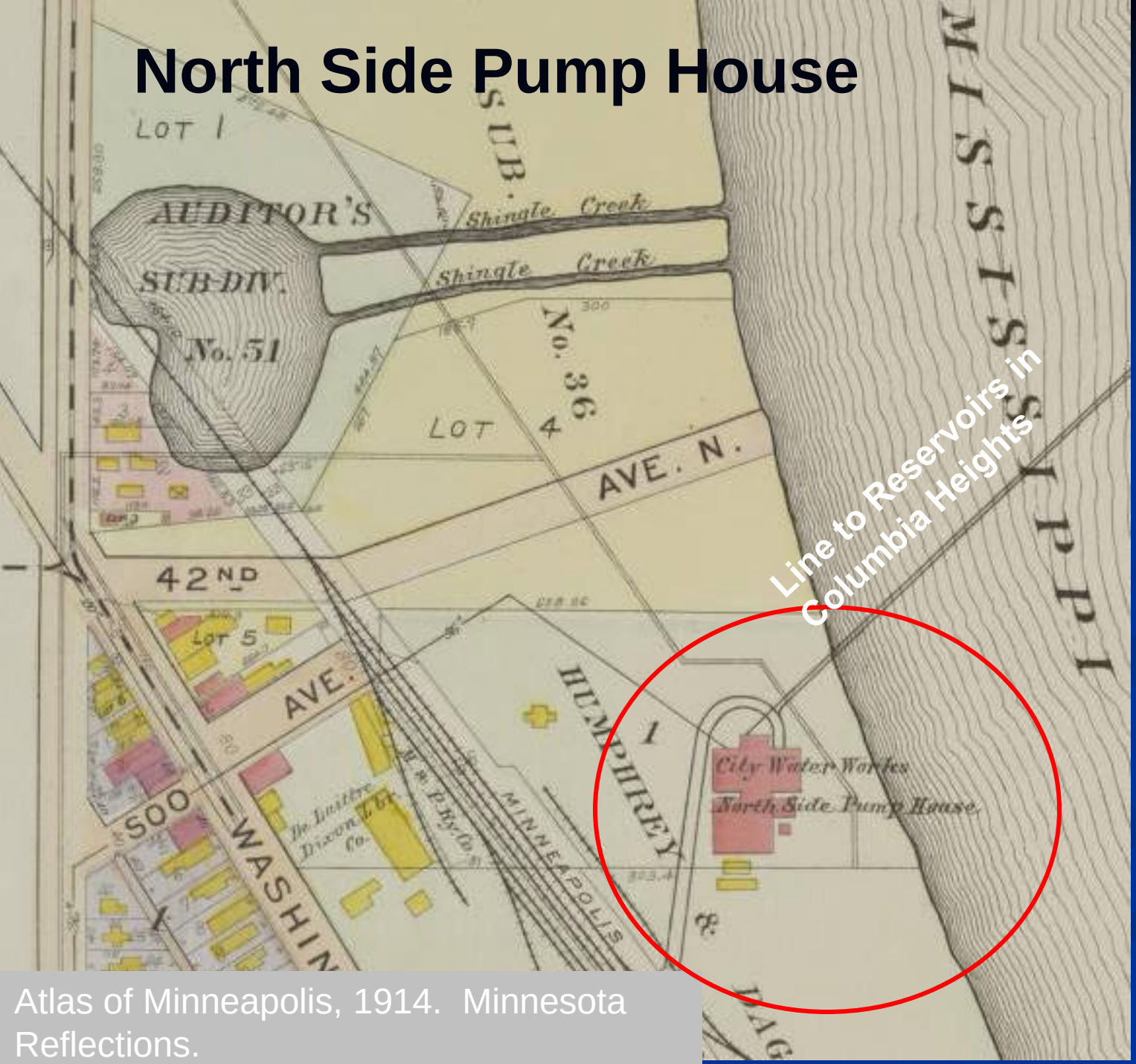

Minneapolis Population 1860-1890
Population (thousands)
180
160
140
120
100
80
60
40
20
0
3
13
47
165
1860
1870
1880
1890
Date



North Side Pumping Station (No. 3), below Shingle Creek. Established 1888. 12 million gallons per day capacity.

Atlas of Minneapolis, 1914. Minnesota Reflections.

North Side Pump House



Atlas of Minneapolis, 1914. Minnesota Reflections.

Pumping Station No. 3 in Camden Park, Shingle Creek, Minneapolis.

Minnesota Historical Society. Photographer: Frank Johnson

1897 Settling Basins, Columbia Heights Waterworks

Each reservoir:

877.5 feet long

413.5 feet wide

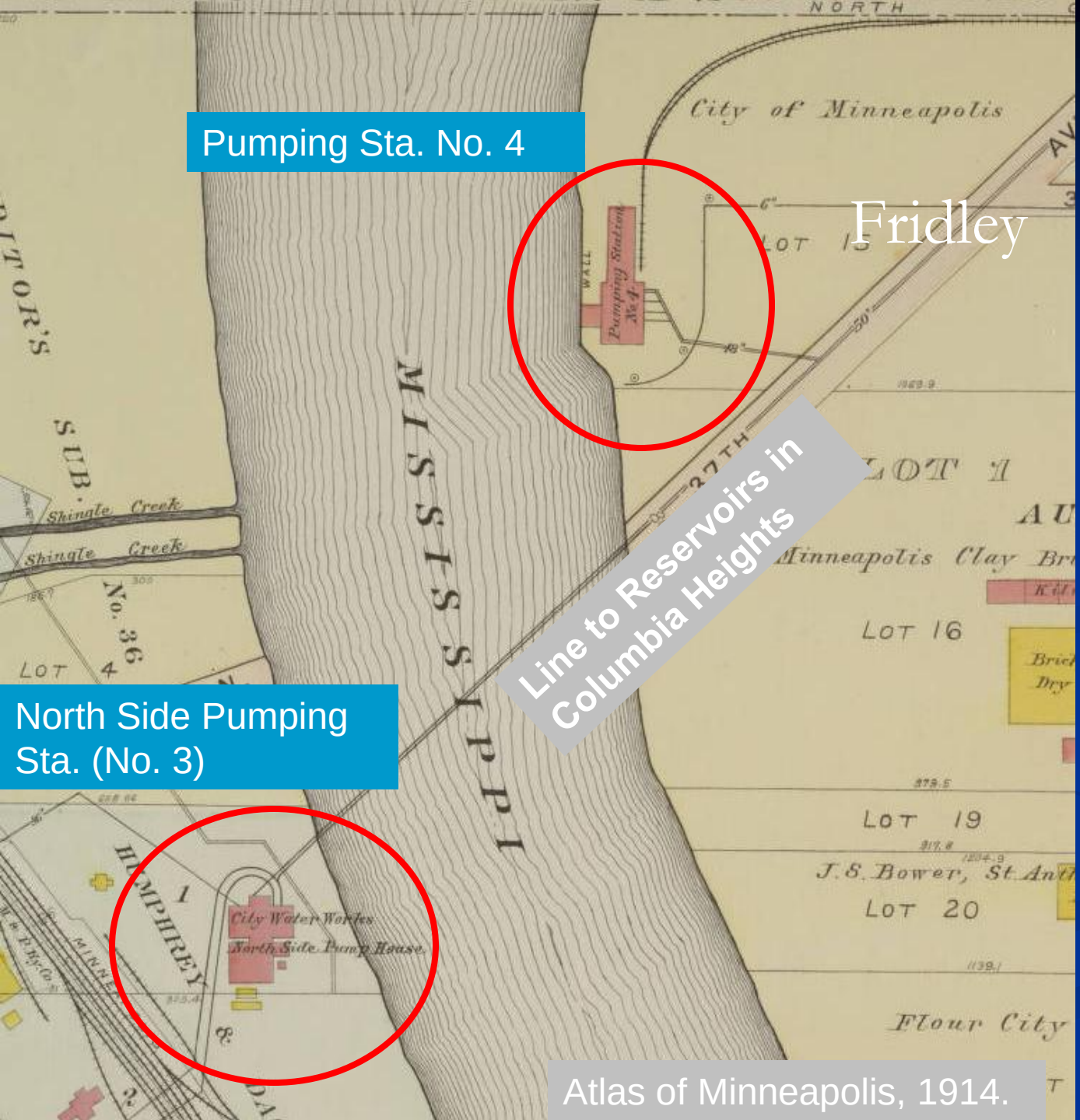
20 feet depth of water.

47 million gallon capacity

1897 Fridley

1898 Columbia Heights

Google Maps



Atlas of Minneapolis, 1914.

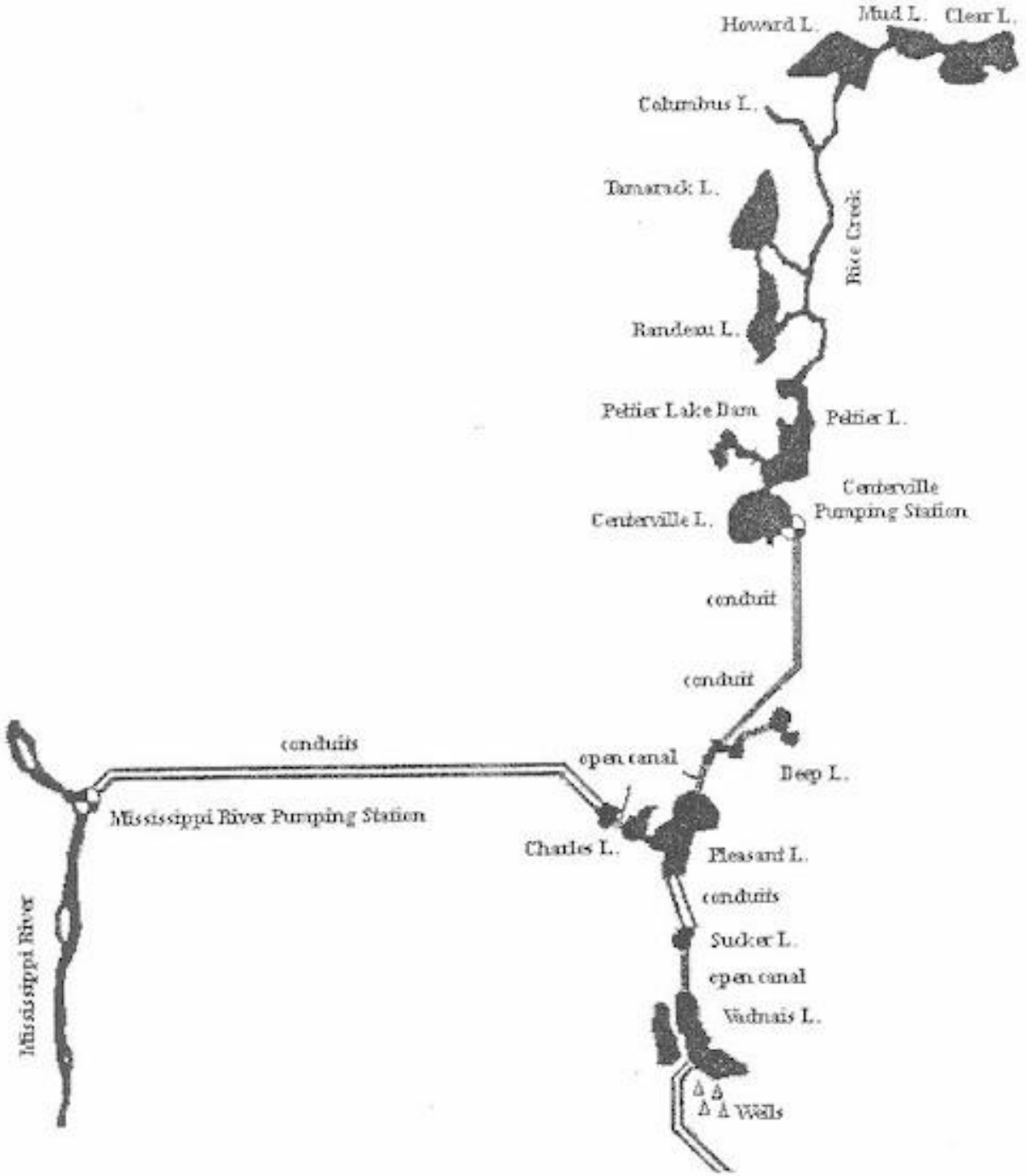
Pumping Station No. 4, Fridley, 1904.

Charles J. Hibbard, 1904. Minnesota Historical Society

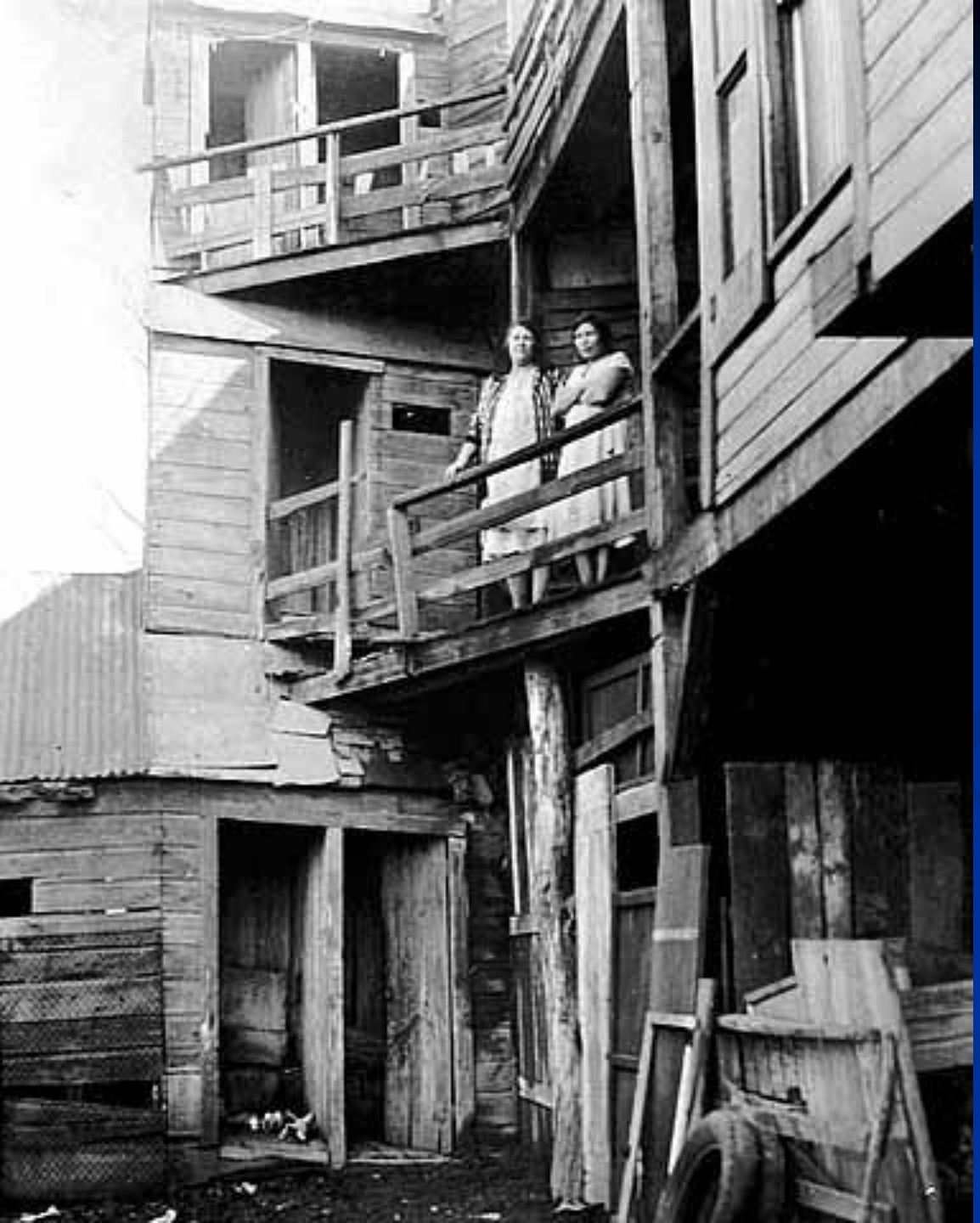
Fridley & Columbia Heights Waterworks

Water intake now above worst pollution but the water still not filtered. Sent to settling ponds and then to the city.

St. Paul Water Supply System



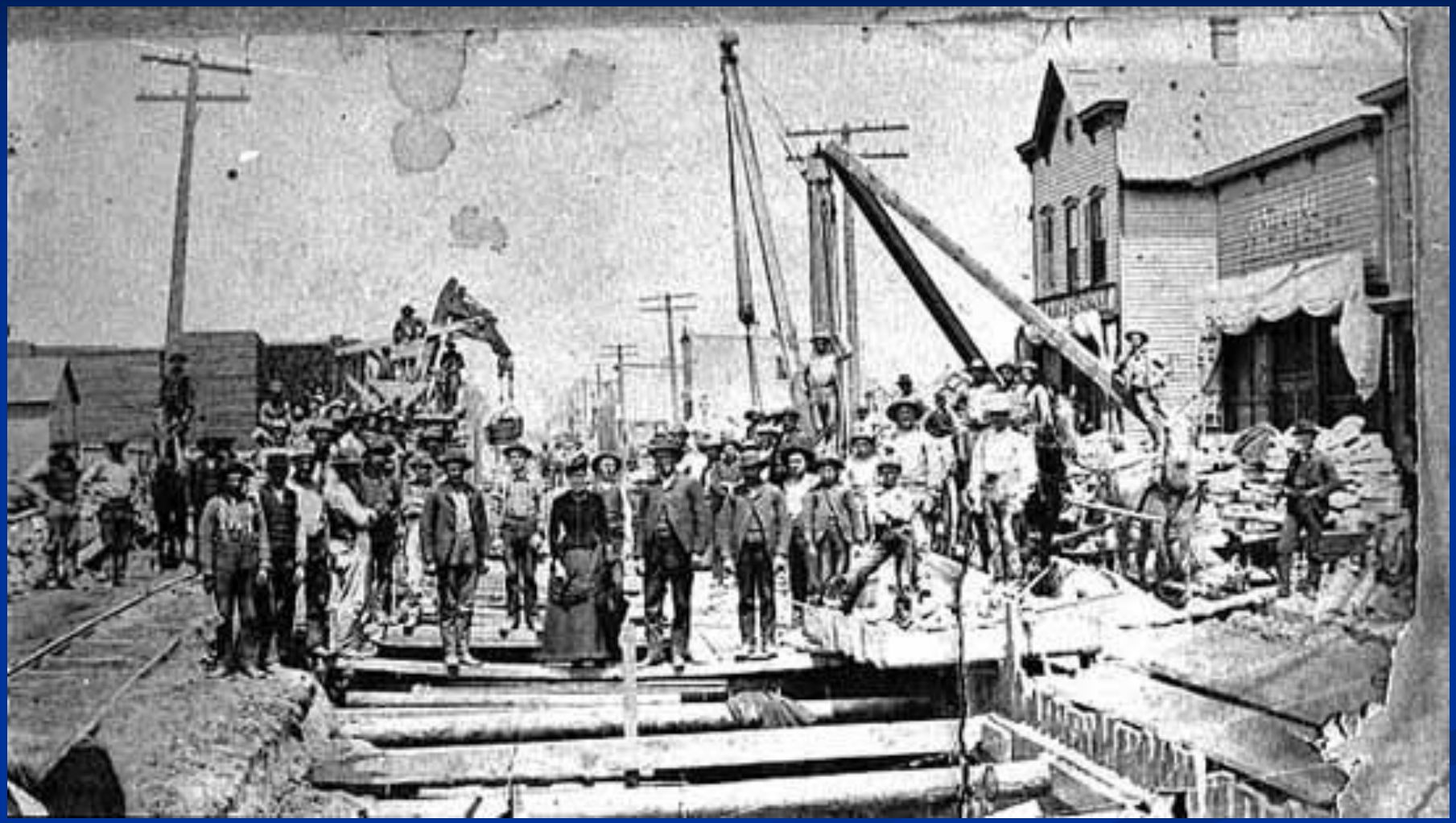
Source: Jennifer Tahtinen and Katy Thompson, May 2001, Macalester College.



A three-story outhouse on State Street, St. Paul.

Photographer: St. Paul Daily News.
Minnesota Historical Society.

Sewer Construction

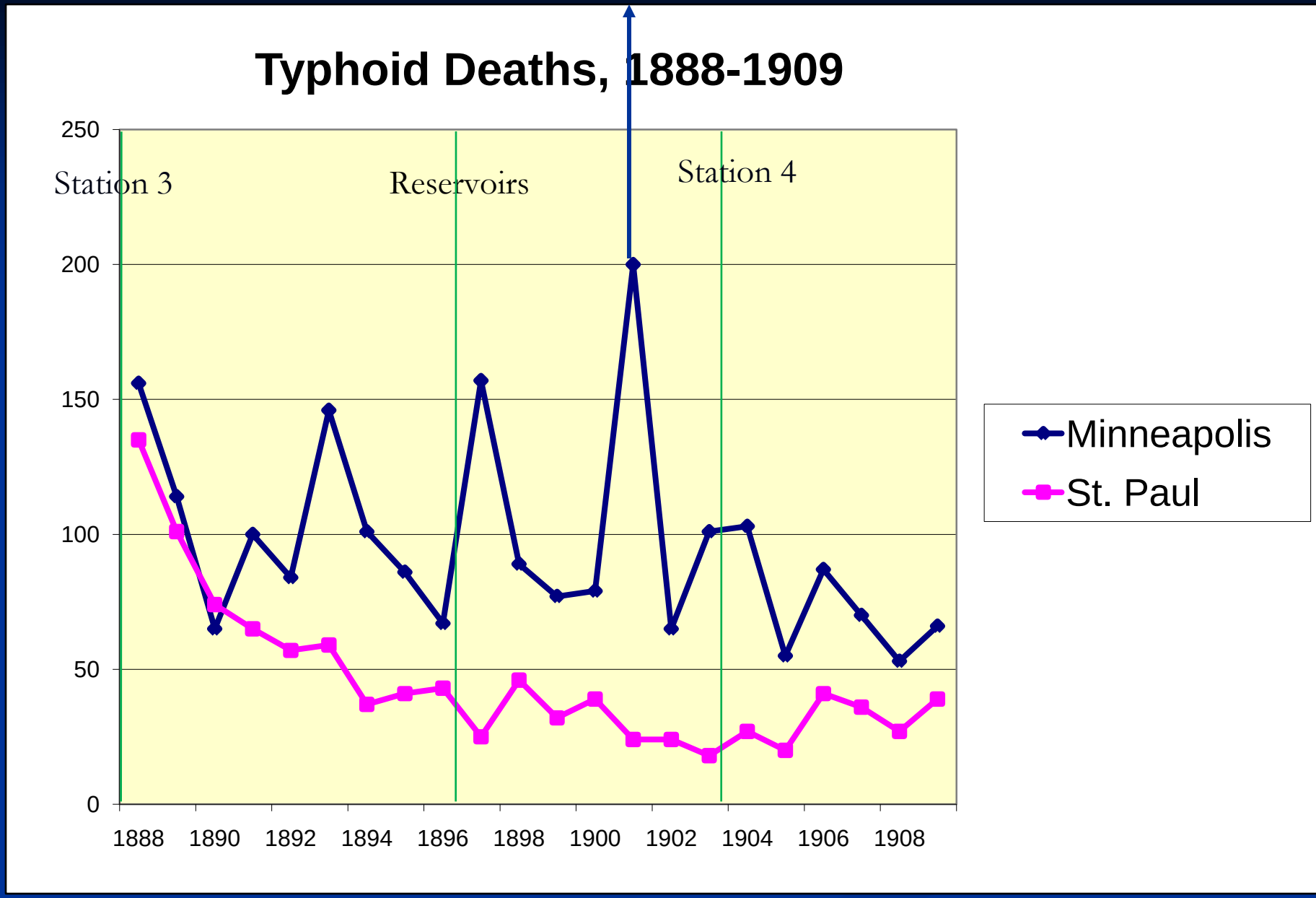


Minnesota Historical Society

Sewer System, St. Paul, 1900

Minnesota Historical Society

"Typhoid Fever: A Disease That Can Be Prevented." Virginia Health Bulletin vol. 1, #3, September 1908, p. 120. farm2.static.flickr.com/

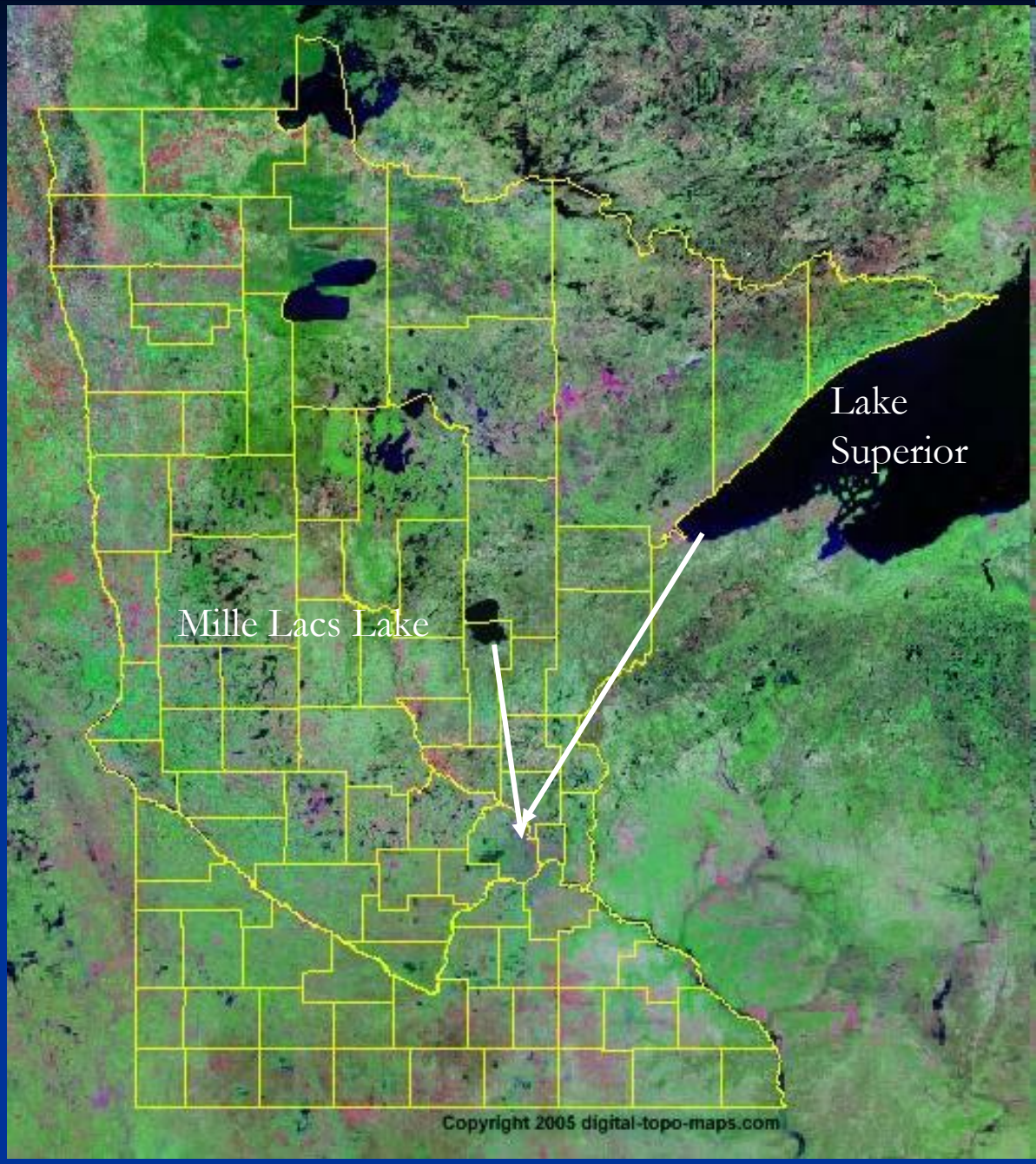

Typhoid Deaths, 1888-1909
250
200
150
100
50
0
Station 3
Reservoirs
Station 4
1888
1890
1892
1894
1896
1898
1900
1902
1904
1906
1908
Minneapolis
St. Paul

Lawrence, Mass. Experiment Station

www.mass.gov/dep/about/organization/early4.htm

Minneapolis Water Supply Sources

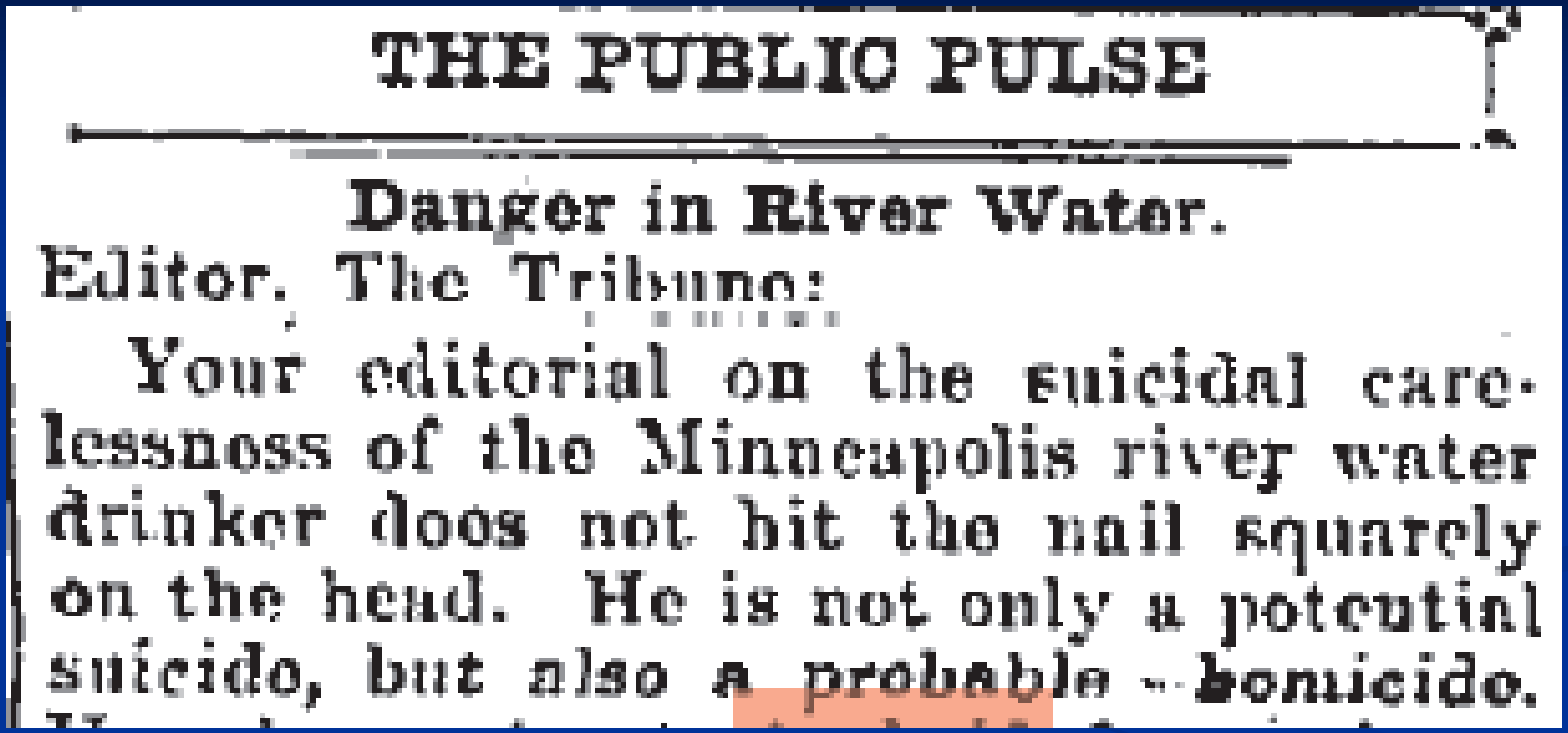
- Deep Wells
- Lake Superior
- Mille Lacs Lake
- Mississippi River



Jersey City, New Jersey.

Gate Houses and Chlorination Plant at Boonton Reservoir, *circa* 1908.

The chlorination plant is the building at the center. *Photo courtesy of Keith Wood, Watershed Superintendent, United Water Jersey City.*
http://www.americanchemistry.com/100years/CityHistory.html



THE PUBLIC PULSE

Danger in River Water.

Editor. The Tribune:

Your editorial on the suicidal carelessness of the Minneapolis river water drinker does not hit the nail squarely on the head. He is not only a potential suicide, but also a probable homicide.

Minneapolis Morning Tribune, January 31, 1910. Letter from Richard Olding Beard.

CAN CITIES DISPENSE POISON WITH IMPUNITY?

Every death or loss of health by the infection of public water is the fault of the municipality, if not every death or sickness caused by the public sale of infected milk, oysters or uncooked food that could be prevented by proper inspection. The power of civil government in both di-

tions. Typhoid could be eliminated

The Tribune always has believed that a sound construction of the law would make cities legally as well as morally responsible for sickness and death that result from their parsimony, negligence or indifference to human life. There is a general conspiracy of those to blame to prevent a fair

Minneapolis Morning Tribune, February 27, 1910. Editorial.

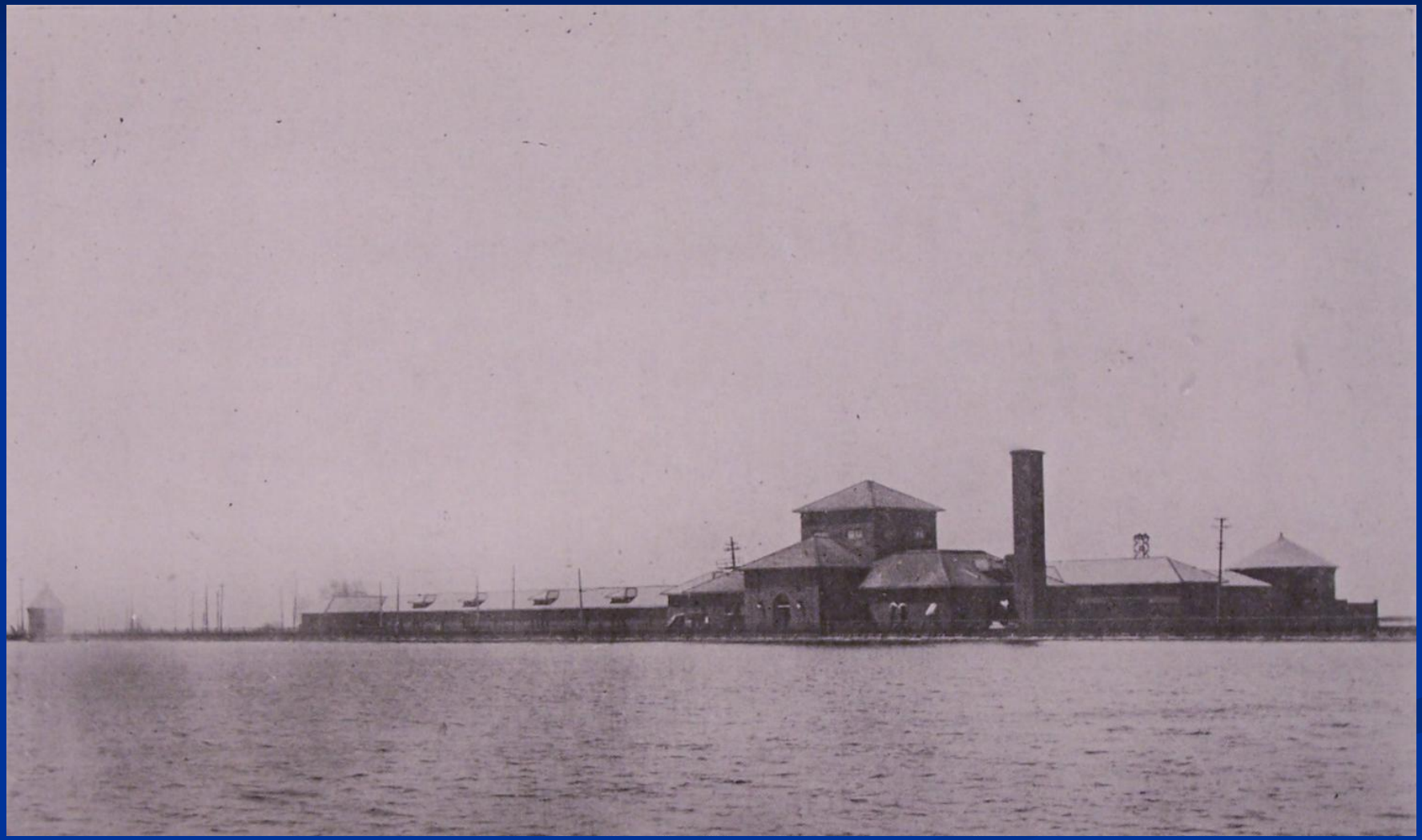
WILL SOMEBODY PLEASE SUE THE CITY.

The city of Minneapolis has only itself to blame for the hurtful attacks made in other places upon the purity of its water and the danger of typhoid infection. We must put up with them till we remove the cause.

No greater service could be done the public than to raise a fund to sue the city for damages for some particular death by typhoid and carry the case up to the supreme court.

Minneapolis Morning Tribune, March 16, 1910. Editorial.

Columbia Heights Filtration Plant, Looking across sedimentation basin

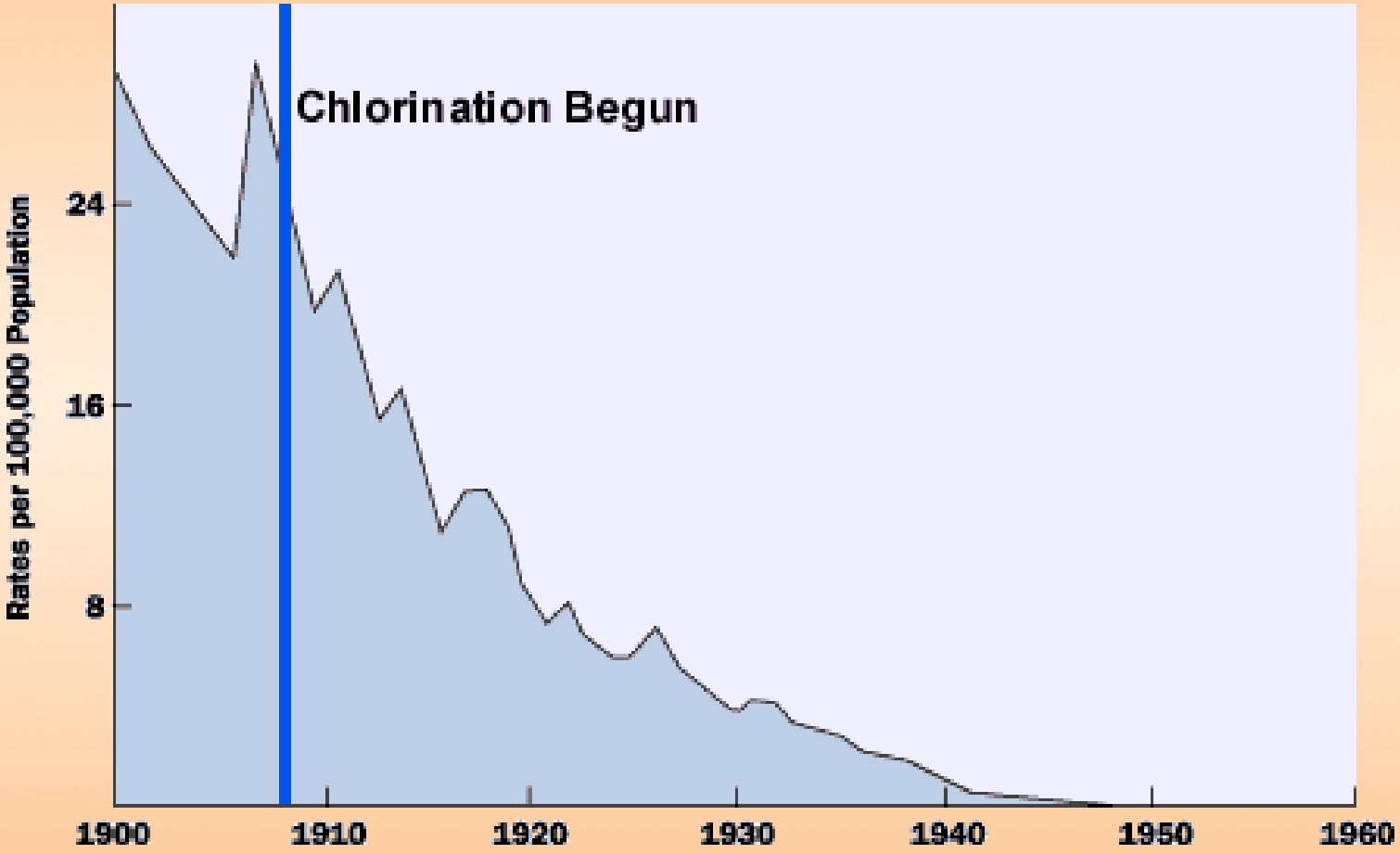


The Water Works of the City of Minneapolis Minnesota: A Brief Historical Sketch of the Present Water Works. January First 1919. Minnesota Historical Society.

Columbia Heights Filtration Plant

The Water Works of the City of Minneapolis Minnesota: A Brief Historical Sketch of the Present Water Works. January First 1919. Minnesota Historical Society.

Death Rate for Typhoid Fever
United States, 1900-1960



Source: U.S. Centers for Disease Control and Prevention, Summary of Notifiable Diseases, 1997.

http://www.waterandhealth.org/drinkingwater/history.html

The "New Public Health"

Dr. H. W. Hill.
Photographer: Benjamin C. Golling
Minnesota Historical Society

"The strongest advocates of this position were physicians imbued with the ethos of the 'New Public Health," such as Samuel Dixon in Pennsylvania or H. W. Hill in Minnesota.

The New Public Health that emerged in the twentieth century stressed the necessity of identifying and combating the routes of infection in order to prevent disease, especially typhoid fever." The Development and Impact of Urban Wastewater Technology: Changing Concepts of Joel Tarr, James McCurley, and Terry F. Yosie, "Water Quality Control, 1850-1930.

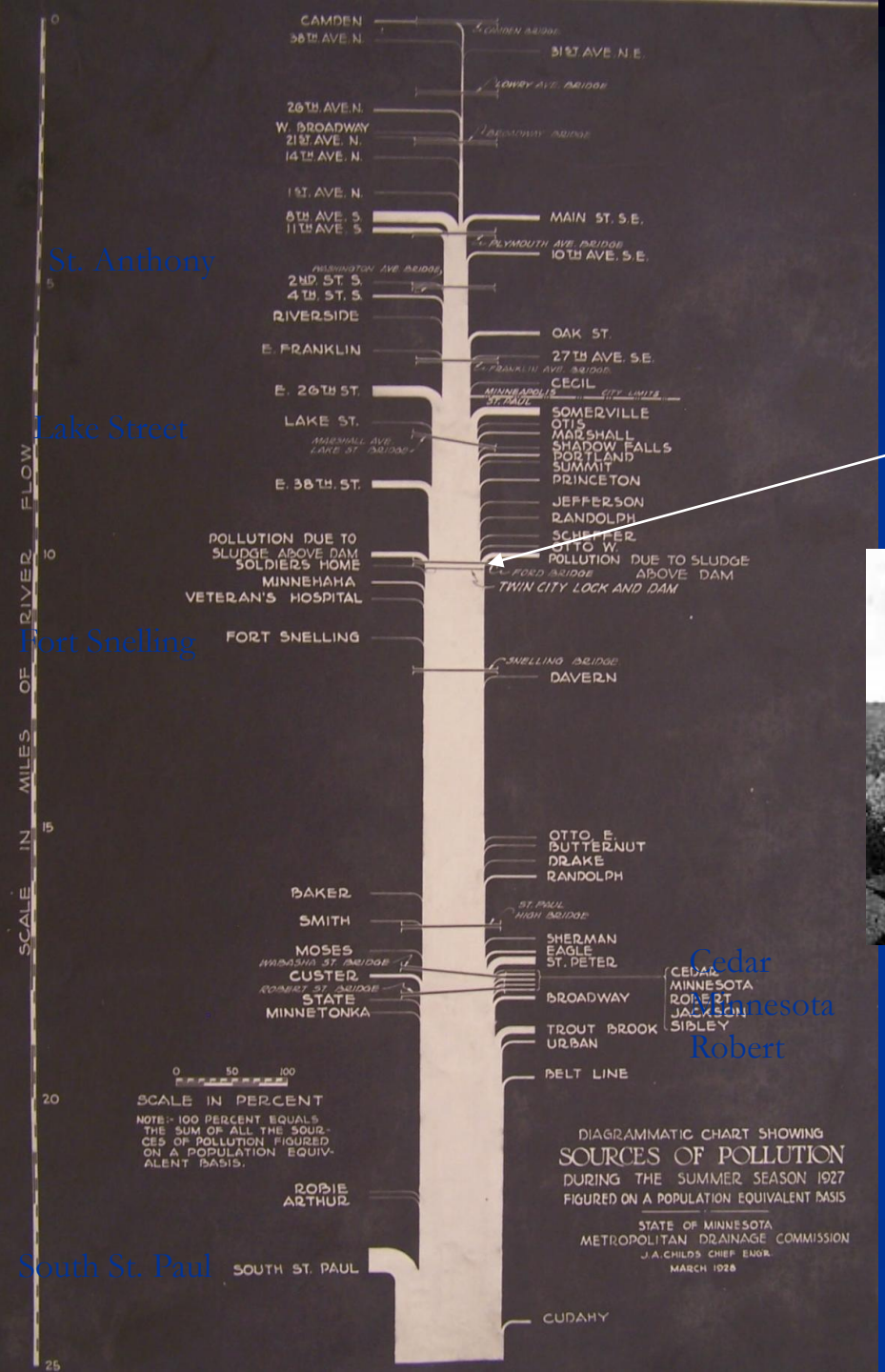
Lake Pepin, 1900

Minnesota Historical Society ??

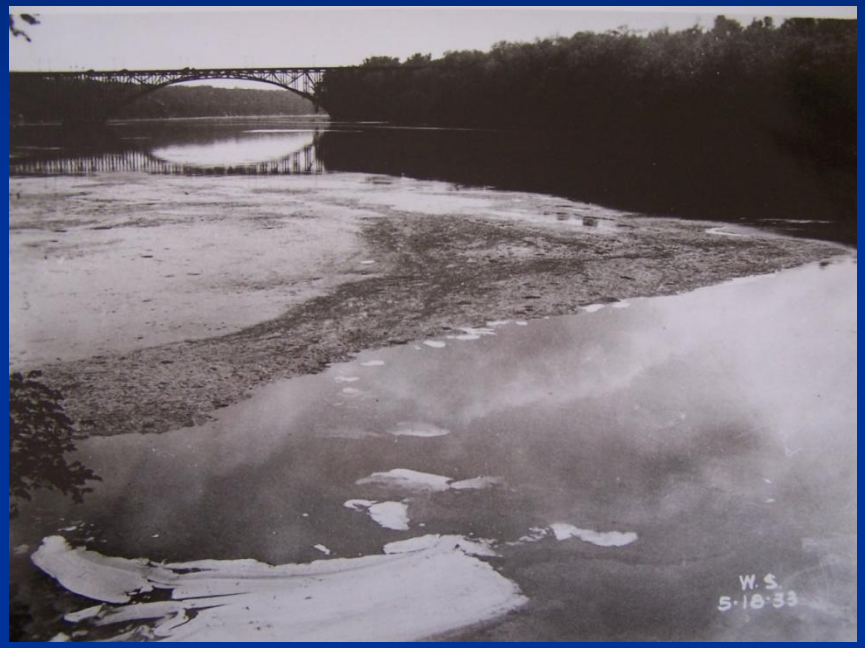
Twin Cities, Sources of Pollution, 1928

Lock & Dam No. 1 (1917)

Minnesota Historical Society

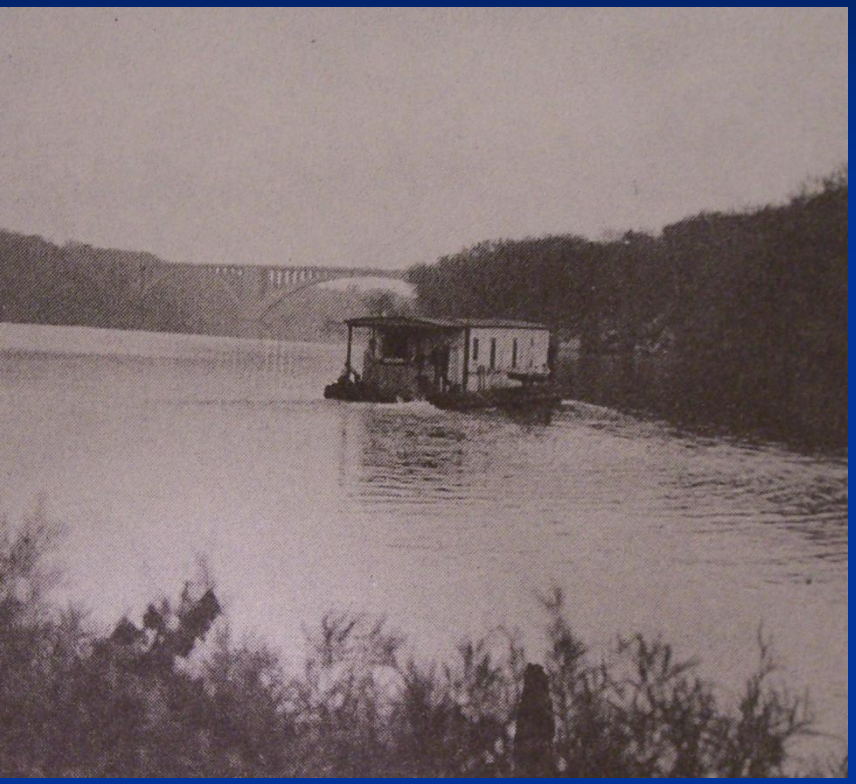


Pollution in the Gorge



When these sewers flowed full and the river fell to its low water stage, 5.8 gallons of water had to dilute one gallon of sewage. Photos: Metropolitan Waste Control Commission.

Besty-Nell in the Gorge



"The *Betsy-Nell* has been lowered into the sewage-laden water where fish die, bloat and turn idly about in the eddies, showing their worm-infested bodies like a curse to the men who infected their world. Continuously their white mouths nudge the manure of humanity, the off-wash of the streets and gutters; and here, curling under our starboard side, a brown foam bubbles and steams. **Such is our baptism into the Great River**."

Clarence Jonk, *River Journey*

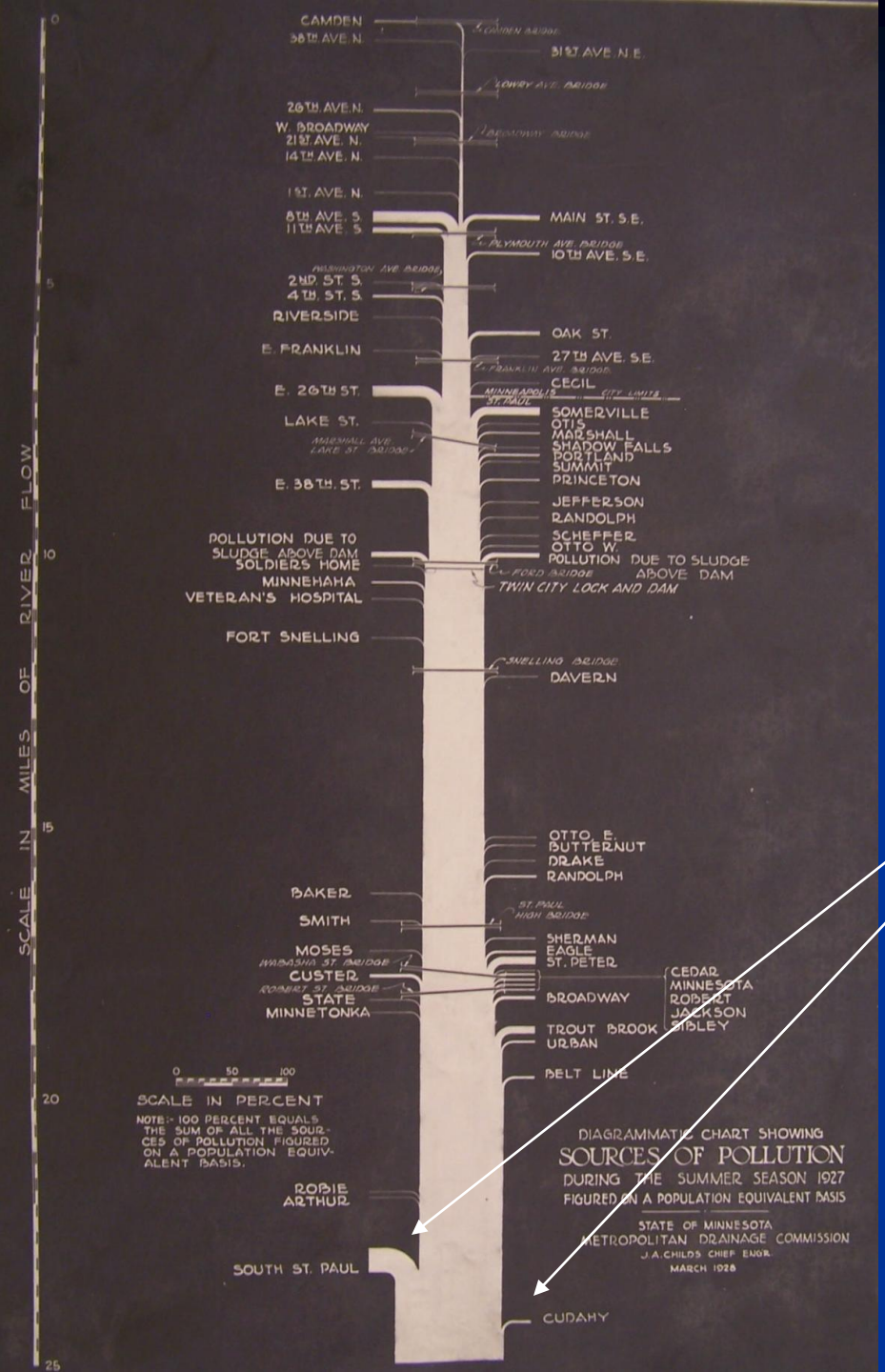
South St. Paul Stockyards

Minnesota Historical Society

Cattle Buyers, 1922

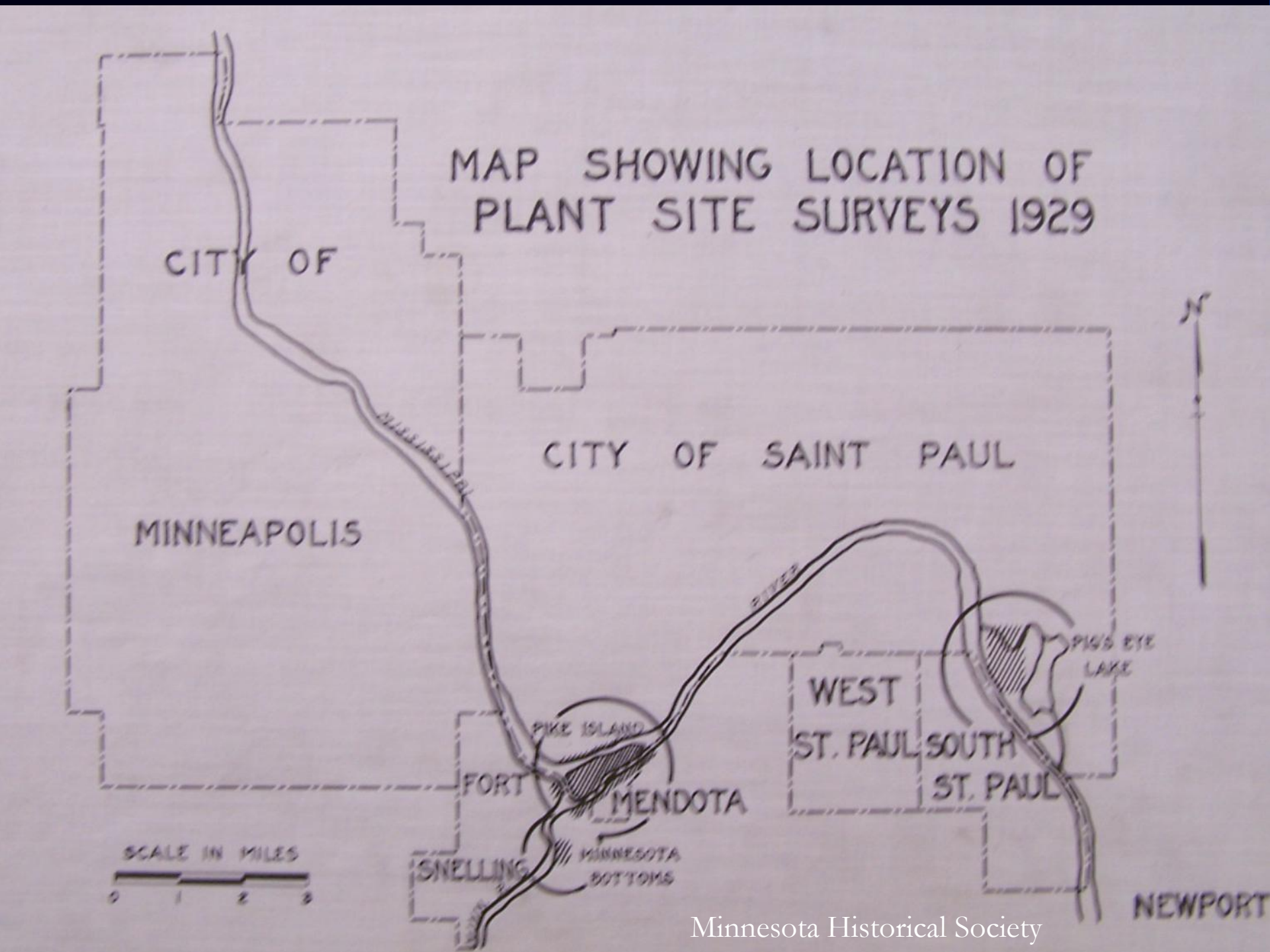
Minnesota Historical Society

Twin Cities, Sources of Pollution, 1928



The Stockyards

Minnesota Historical Society



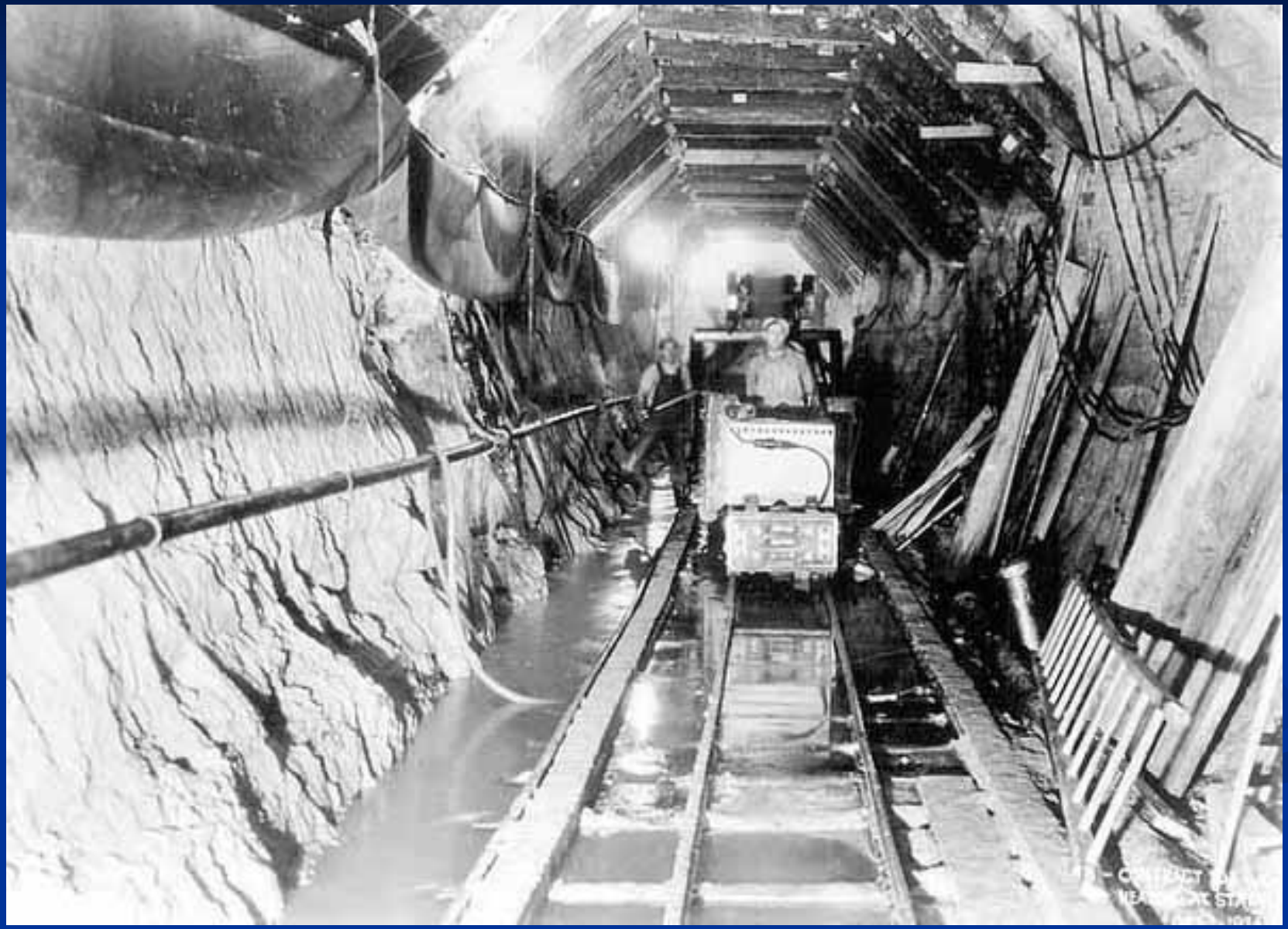
Lock and Dam No. 2

Completed 1930

Pigs Eye Treatment Plant Construction, 1934-38

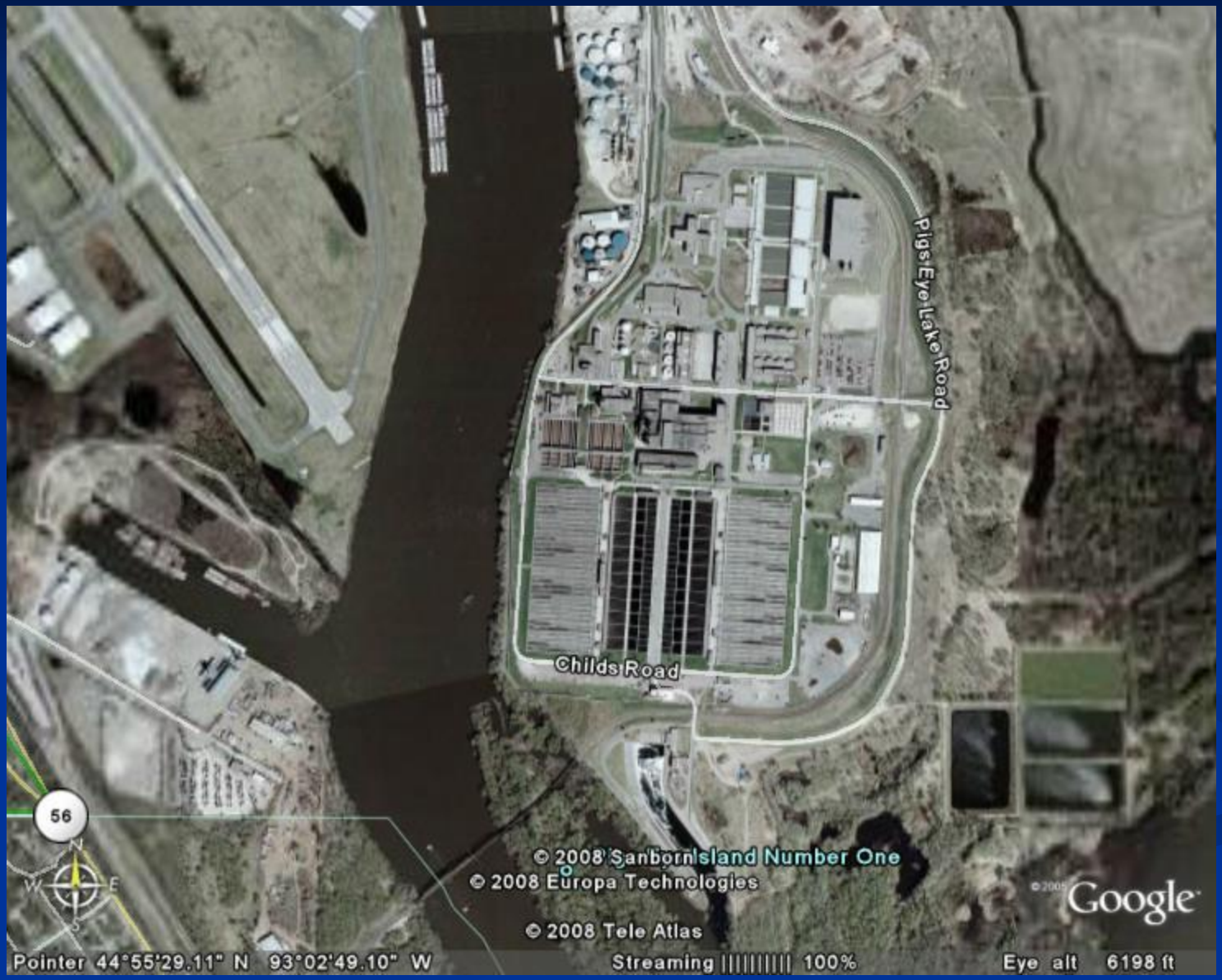
Minnesota Historical Society

Interceptor Tunnel Construction, 1937



Minnesota Historical Society

Pigs Eye Treatment Plant, St. Paul



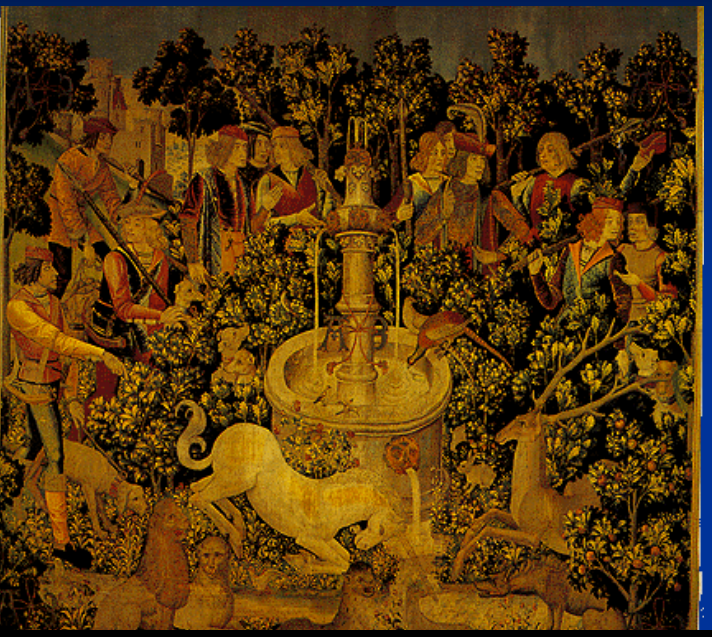
Columbia Heights, Ultra Filtration Plant

www.water-technology.net/.../columbia3.html

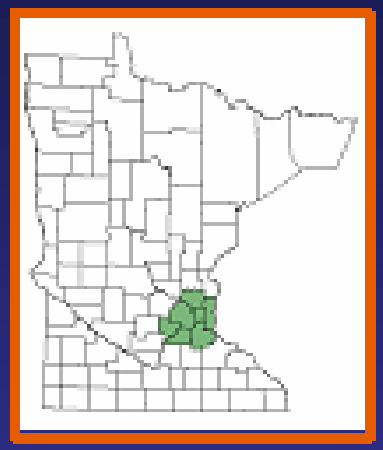
Unicorn Purifying the Water

www.lair2000.net/.../Uses_of_Unicorns.html

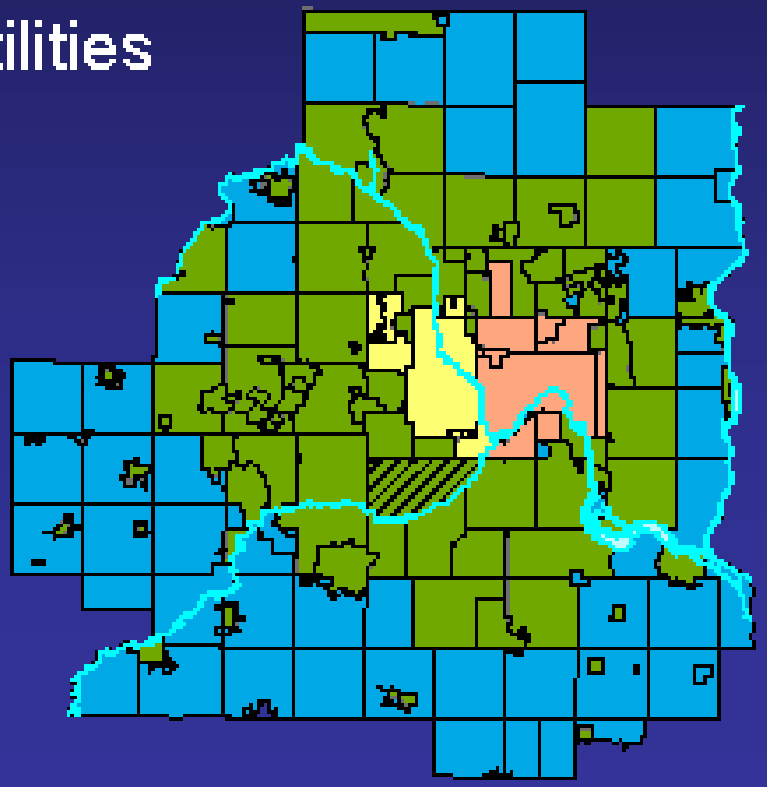
Unicorns Purifying the Water



Water Supply Sources



- 2.8 million users
- 187 cities, townships, & tribes
- 109 water utilities



Municipal wells
Private wells
} (1,800,000)

River alone (465,000)

River, lakes, municipal wells (415,000)

River and municipal wells (85,000)

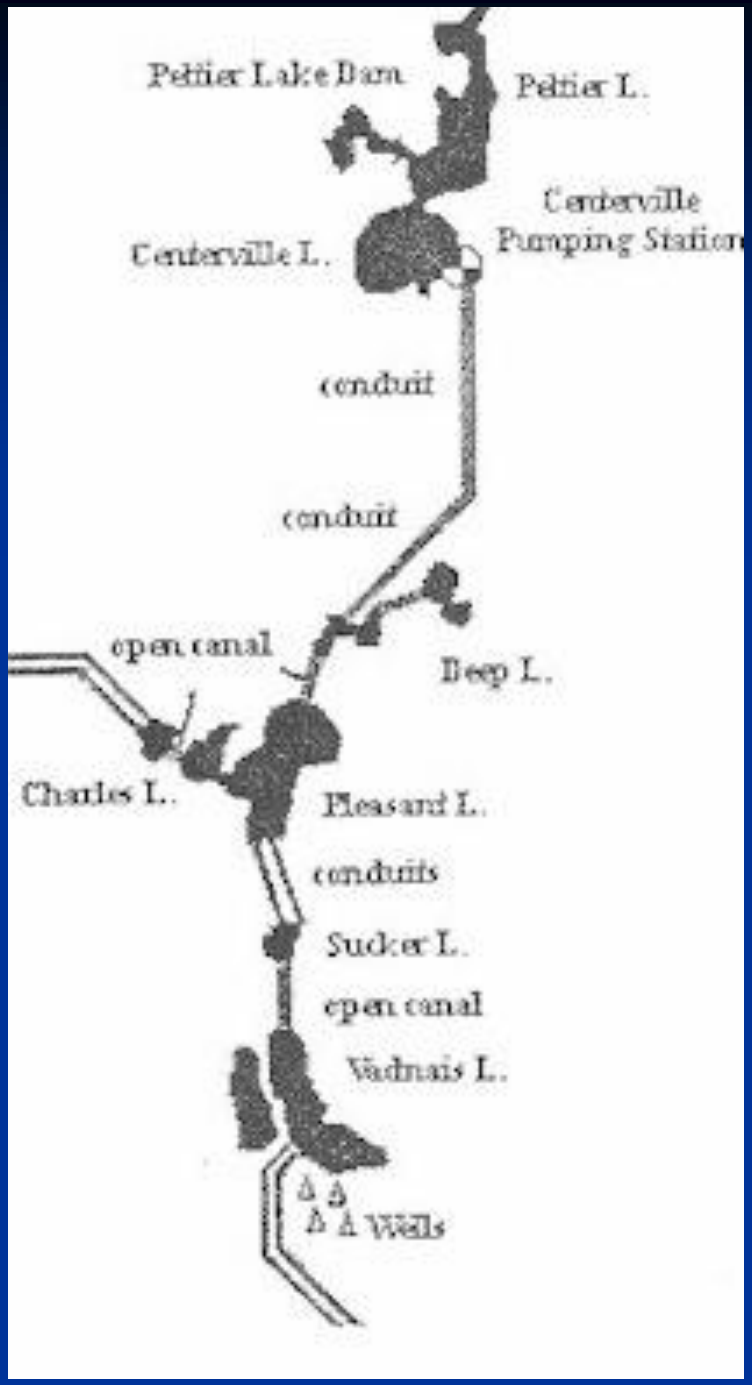
Metropolitan Council, 2007

St. Paul Water Supply System

- 1856 the Territorial Legislature chartered a private water company.
- 1857 St. Paul Water Company established.
- 1857-1866 Economic Panic of 1857 and the Civil War stalled progress.
- 1866 one horse cart only delivering water to St. Paul residents and the public was becoming impatient.
- 1869 Legislature grants company permission to connect surrounding lakes to Lake Phalen, which had been identified as the first source of water and approves work on canals, dams, aqueducts, and gates which began in 1869.

St. Paul Water Supply System

- On December 14, 1869, the Saint Paul Dispatch, proclaimed that "The main portion of the city of Saint Paul is now in possession of water privileges which cannot be excelled by any city in the union, in the purity and softness of the water, the perfection of the pipes, the unfailing natural reservoir, and the abundant pressure afforded."



St. Paul Water Supply System

1881 Citizens vote to buy out the private company.
1882, St. Paul water works began pumping water from Vadnais, Sucker, and Pleasant Lakes.
1889 Baldwin Lake added.
1894 Otter and Bald Eagle Lakes.
1896 the St. Paul waterworks built a 42 inch wooden conduit to Centerville Lake.

Source: Jennifer Tahtinen and Katy Thompson, May 2001, Macalester College.